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Buddhi Pantha* (pantha@math.utk.edu), 301 Woodlawn Pike, Apt E9, Knoxville, TN 37920, and **Suzanne Lenhart** and **Judy Day**. *Optimal Control in PDE/DE Model for an Anthrax Epizootic*. Preliminary report.

Anthrax is a rapidly fatal, infectious disease which occurs in many animal species, particularly herbivore mammals and is one of the main causes of population decline in several national parks worldwide. Since the anthrax spores can survive in soil for a long time and the spores can be found in most parts of the world, clearing anthrax spores from the environment is practically impossible. In this project, we extend an existing mathematical model for anthrax epizootic by introducing two controls, vaccination and carcass disposal. Parameter values are estimated from real data. We investigate the effects of allocating efforts to vaccination and carcasses removal on disease transmission. We formulate the control problem and find the optimal control pair that minimizes density of carcass, environmental contamination and the cost of vaccination and carcass removal. Numerical simulations using the forward-backward sweep method are obtained. (Received August 03, 2015)